# FIRST ADMISSIONS TO A PSYCHIATRIC HOSPITAL IN SINGAPORE — A PROSPECTIVE STUDY

O K Leong

# SYNOPSIS

This paper reports a one year study of first admissions to Woodbridge Hospital, the main psychiatric hospital in Singapore. The crude admission rate was found to be 42.5 per 100,000 of the population over the age of 10 years. Male admissions outnumber females by 1.48: 1 and the majority of the admissions fell within the 15-35 years age group. The highest proportion had illnesses of less than one week's duration and functional psychoses, mainly Schizophrenia, accounted for the majority of the diagnoses. The findings are discussed and compared to studies of a similar nature carried out in other countries.

# INTRODUCTION

Woodbridge Hospital is the main psychiatric hospital in Singapore. It has 50 wards with 2,300 beds under 3 clinical units, of which 12 wards are acute admission wards. The Hospital admits on the average about 1,000 new cases a year and about 4,000 re-admissions annually.

The object of this study was to investigate the extent and characteristics of patients who were admitted to the Hospital for the first time and to compare it with the findings of other studies of a similar nature carried out in other countries.

The limitations of hospital data as measures of incidence of psychiatric illness are well known. Nevertheless, hospital figures do have value in studies of severe psychiatric illness. For Singapore, the findings will have useful implications for future planning of psychiatric services in the Republic.

Woodbridge Hospital Jalan Woodbridge Singapore 1955

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## **METHOD**

All new patients admitted to the adult wards over a one year period from 1.3.82 to 28.2.83 were selected for the study. A questionnaire was designed to gather the data required. The questionnaire was in two parts: the first, concerning personal, social and demographic data was filled by the Medical Social Worker through interviews with relatives or with the patients, and the second, dealing with clinical data, by the doctor in charge of the patients. The completed questionnaires were checked and the information gathered was sorted and tabulated with the aid of a computer.

# **RESULTS**

Over the one year period, 937 patients were registered as new admissions. Of these 46 turned out to be in fact readmissions as they were old cases who were readmitted either as persons with unknown identities or that they denied any history of previous admissions to the Hospital at the time of admission. This left 891 as first admissions, giving a crude admission rate of 42.5 per 100,000 of the population over the age of 10 years. (Singapore's population being about 2.5 million of which 2.0984 million were over the age of 10 years in 1983).

Table 1 shows the distribution of the new admissions by age, sex and ethnic groups. The majority of the patients fell within the 15-35 age groups (69.9%).

5.6% were over the age of 65. Males outnumber females by 1.48:1. (General population sex ratio M:F = 1.04:1 for persons above the age of 10 years).

The ethnic group distribution of the patients is shown in Table 2. The distribution corresponds more or less to the ethnic composition for the whole of Singapore.

TABLE 2: NEW INPATIENTS BY ETHNIC GROUP

|                            | Patie   | ents | General      |
|----------------------------|---------|------|--------------|
| Ethnic Group               | No.   % |      | Population % |
| Chinese                    | 652     | 76.2 | 76.7         |
| Malays                     | 101     | 11.3 | 14.7         |
| Indians/ <b>P</b> akistani | 96      | 10.8 | 6.4          |
| Others                     | 42      | 4.7  | 2.2          |

#### **MARITAL STATUS**

Table 3 shows the distribution of the new admissions by marital status and sex.

62.4% of the new admissions were single. 73.7% of the males were single whereas only 45.7% of the females were not married. Where married patients are concerned, the proportion of married females (40.9%) is much higher than that of married males (21.6%). This interesting observation requires further study.

TABLE 1: DISTRIBUTION OF NEW ADMISSIONS BY AGE, SEX AND ETHNIC GROUP

| Age            |     | Chine | ese   |    | Mal | ay    | In | dian/P | akistani |    | Oth | ers   |     | Tota | al    |
|----------------|-----|-------|-------|----|-----|-------|----|--------|----------|----|-----|-------|-----|------|-------|
| Group<br>(yrs) | М   | F     | Total | М  | F   | Total | М  | F      | Total    | М  | F   | Total | М   | F    | Total |
| 10-14          | 7   | 2     | 9     | 1  | 3   | 4     | 1  | 0      | 1        | 0  | 0   | 0     | 9   | 5    | 14    |
| 15-19          | 77  | 30    | 107   | 16 | 3   | 19    | 18 | 2      | 20       | 5  | 2   | 7     | 116 | 37   | 153   |
| 20-24          | 87  | 47    | 134   | 27 | 3   | 30    | 13 | 3      | 16       | 4  | 6   | 10    | 131 | 59   | 190   |
| 25-29          | 61  | 50    | 111   | 6  | 8   | 14    | 14 | 3      | 17       | 5  | 6   | 11    | 86  | 67   | 153   |
| 30-34          | 37  | 41    | 78    | 8  | 12  | 12    | 13 | 4      | 17       | 5  | 1   | 6     | 63  | 50   | 113   |
| 35-39          | 14  | 27    | 41    | 1  | 1   | 2     | 2  | 7      | 9        | 1  | 0   | 1     | 18  | 35   | 53    |
| 40-44          | 18  | 15    | 33    | 4  | 5   | 9     | 5  | 1      | 6        | 1  | 1   | 2     | 28  | 22   | 50    |
| 45-49          | 15  | 17    | 32    | 2  | 2   | 4     | 2  | 0      | 2        | 1  | 1   | 2     | 20  | 20   | 40    |
| 50-54          | 14  | 16    | 30    | 1  | 2   | 3     | 0  | 0      | 0        | 0  | 0   | 0     | 15  | 18   | 33    |
| 55-59          | 7   | 12    | 19    | 2  | 0   | 2     | 5  | 0      | 5        | 2  | 0   | 2     | 16  | 12   | 28    |
| 60-64          | 5   | 7     | 12    | 0  | 0   | 0     | 2  | 0      | 2        | 0  | 0   | 0     | 7   | 7    | 14    |
| > 65           | 20  | 26    | 46    | 1  | _ 1 | 2     | 1  | 0      | 1        | 1  | 0   | 1     | 23  | 27   | 50    |
| Total          | 362 | 290   | 652   | 69 | 32  | 101   | 76 | 20     | 96       | 25 | 17  | 42    | 532 | 359  | 891   |

TABLE 3: NEW INPATIENTS BY MARITAL STATUS & SEX

| Marital   |     | SE           | TOTAL |              |     |       |
|-----------|-----|--------------|-------|--------------|-----|-------|
| Status    | No. | M<br>No.   % |       | F<br>No.   % |     | %     |
| Single    | 392 | 73.7         | 164   | 45.7         | 556 | 62.4  |
| Married   | 115 | 21.6         | 147   | 40.9         | 262 | 29.4  |
| Divorced  | 7   | 1.3          | 8     | 2.3          | 15  | 1,7   |
| Separated | 11  | 2.1          | 7     | 1.9          | 18  | 2.0   |
| Widowed   | 7   | 1.3          | 31    | 8.6          | 38  | 4.3   |
| Others    | 0   | 0            | 2     | 0.6          | 2   | 0.2   |
| Total     | 532 | 100.0        | 359   | 100.0        | 891 | 100.0 |

TABLE 4: DISTRIBUTION OF NEW ADMISSIONS BY NATIONALITY AND SEX

| Nationality                      | Male | Female | Total | %    |
|----------------------------------|------|--------|-------|------|
| Singapore Citizens               | 455  | 307    | 762   | 85.5 |
| Singapore Permanent<br>Residents | 13   | 11     | 24    | 2.7  |
| Malaysians                       | 28   | 18     | 46    | 5.2  |
| Others                           | 25   | 19     | 44    | 4.9  |
| Not known                        | 11   | 4      | 15    | 1.7  |
| Total                            | 532  | 359    | 891   | 100  |

## NATIONALITY

Table 4 shows the distribution of the new admissions by citizenship status.

Singaporeans formed the obvious majority (85.5%), Malaysians 5.2% and other nationals 4.9%. Thus about 10% of the new admissions were from foreign countries. The majority of the foreign patients were tourists who developed symptoms necessitating emergency admissions to the Hospital.

SOURCES OF REFERRAL

TABLE 5: DISTRIBUTION OF NEW ADMISSIONS BY SOURCE OF REFERRAL

| Source of Referral            | No  | %    |
|-------------------------------|-----|------|
| Self-referral                 | 73  | 8.2  |
| Psychiatric Outpatient Clinic | 72  | 8.1  |
| Other Govt Hospitals          | 331 | 37.1 |
| Govt OPDs                     | 58  | 6.5  |
| Pte Practitioner              | 95  | 10.7 |
| Singapore Armed Forces        | 75  | 8.4  |
| Police                        | 158 | 17.7 |
| Others                        | 29  | 3.3  |
| Total                         | 891 | 100  |

Table 5 shows the distribution of the new admissions by sources of referral. The majority of admissions were referred from other government hospitals (37.1%) followed by cases brought by the police (17.7%). 10.7% were referred by private practitioners and 8.4% of the cases were doing National Service at the time of their admissions.

LEGAL STATUS OF ADMISSIONS

TABLE 6: DISTRIBUTION OF NEW ADMISSIONS BY LEGAL STATUS AND SEX

| Admission<br>Status | Male | Female | Total | %     |
|---------------------|------|--------|-------|-------|
| Informal            | 302  | 269    | 571   | 64.1  |
| Formal              | 210  | 85     | 295   | 33.1  |
| Court Order         | 17   | 3      | 20    | 2.2   |
| Others              | 3    | 2      | 5     | 0.6   |
| Total               | 532  | 359    | 891   | 100.0 |

Patients are admitted to Woodbridge Hospital either informally or formally under the Mental Disorders and Treatment Act. They can also be remanded by the Court either for psychiatric assessment prior to trial or as part of their sentence or disposal after trial.

Table 6 shows that the majority (64.1%) of the new cases were informal admissions. Formal admissions form about one third (33.1%) whereas court orders accounted for 2.2% of the new admissions. The "others" category included admissions for assessment prior to admission to Tampines Home, a home for the mentally retarded situated near Woodbridge Hospital.

## MODE OF PRESENTATION

Doctors in charge of patients were asked to indicate the main presenting feature leading to the patients' admissions. The results are tabulated as shown in Table 7.

TABLE 7: DISTRIBUTION OF NEW ADMISSIONS BY MAIN ADMISSION FEATURE

| Admission feature                       | No. | %    |
|---|-----|------|
| Aggressive, disturbed violent behaviour | 337 | 37.8 |
| Abnormal/irrational behaviour           | 199 | 22.3 |
| Suicidal                                | 95  | 10.7 |
| Withdrawn/mute                          | 39  | 4.4  |
| Wandering/public nuisance               | 56  | 6.3  |
| Neurotic/somatic symptoms               | 23  | 2.6  |
| Delusions/hallucinations                | 42  | 4.7  |
| Depression                              | 21  | 2.3  |
| Others                                  | 79  | 8.9  |
| Total                                   | 891 | 100  |

The highest proportion of cases were admitted because of violent, aggressive and disturbed behaviour (37.8%) followed by those displaying abnormal behaviour such as talking and laughing to themselves. (22.3%). Suicidal behaviour led to admission in about 10.7% of the new admissions. Smaller percentages of cases fell within the other categories as listed in the table.

# DURATION OF ILLNESS BEFORE ADMISSIONS

The duration of illness before admission to the Hospital was studied. Table 8 shows the distribution of the new admissions by duration of illness prior to admisson.

TABLE 8: DISTRIBUTION OF NEW ADMISSIONS BY DURATION OF ILLNESS BEFORE ADMISSION AND ETHNIC GROUP

| Duration of illness before admission | Chinese | Malay | Indian/<br>Pakistani | Others | Total | %    |
|--------------------------------------|---------|-------|----------------------|--------|-------|------|
| Less than 1 week                     | 140     | 23    | 26                   | 16     | 205   | 23.0 |
| 1 week - 1 month                     | 91      | 13    | 16                   | 9      | 129   | 14.5 |
| 1 - 3 months                         | 80      | 13    | 7                    | 2      | 102   | 11.4 |
| 3 - 6 months                         | 41      | 5     | 9                    | 1      | 56    | 6.3  |
| 6 - 12 months                        | 30      | 10    | 8                    | 3      | 51    | 5.7  |
| 1 - 2 years                          | 84      | 7     | 12                   | 1      | 104   | 11.7 |
| 2 - 5 years                          | 59      | 7     | 2                    | 4      | 72    | 8.1  |
| More than 5 years                    | 114     | 16    | 14                   | 5      | 149   | 16.7 |
| Not known                            | 13      | 7     | 2                    | 1      | 23    | 2.6  |
| Total                                | 652     | 101   | · 96                 | 42     | 891   | 100  |

TABLE 9: DISTRIBUTION OF NEW ADMISSIONS BY PLACE OF FIRST TREATMENT AND ETHNIC GROUPS

| Place of first treatment | Chinese | Malay | Indian/<br>Pakistani | Others | Total | %    |
|--------------------------|---------|-------|----------------------|--------|-------|------|
| Nil                      | 347     | -67   | 64                   | 25     | 503   | 56.5 |
| Other Govt Hospital      | 21      | 0     | 3                    | 1      | 25    | 2.8  |
| Govt OPD                 | 9       | 0     | 1                    | 0      | 10    | 1.1  |
| General Practitioner     | 35      | 1     | 1                    | 0      | 37    | 4.2  |
| Private Psychiatrist     | 52      | 1     | 1                    | 3      | 57    | 6.4  |
| Traditional healer       | 56      | 15    | 9                    | 1      | 81    | 9.1  |
| Chinese physician        | 3       | 0     | О                    | 0      | 3     | 0.3  |
| Psychiatric OPD          | 92      | 8     | 8                    | 5      | 113   | 12.7 |
| Woodbridge Hosp OPD      | 14      | 0     | 2                    | 0      | 16    | 1.8  |
| Others                   | 18      | 7     | 5                    | 5      | 35    | 3.9  |
| Not Known                | 5       | 2     | 2                    | 2      | 11    | 1.2  |
| Total                    | 652     | 101   | 96                   | 42     | 891   | 100  |

23% of the new admissions had illnesses of less than 1 week's duration. This applies to all the ethnic groups. 37.5% of them had illnesses of less than a month's duration and 16.7% were ill for more than 5 years before admission.

# PREVIOUS TREATMENT

Previous treatment received by the newly admitted patients was also studied. Table 9 shows the distribution of the new admissions by place of first treatment.

The majority of the new admissions had no previous treatment before admission to Woodbridge Hospital (56.5%). This was true for all the ethnic groups. 14.5% of them had received treatment at one of our psychiatric outpatient clinics including the Woodbridge Outpatient Clinic and 9.1% went to see a traditional healer when they developed their illnesses.

Amongst the Chinese, 8.6% first sought help from a traditional healer and amongst the Malays 14.9%.

10.6% of the new cases were first treated by private doctors including private psychiatrists.

Table 10 shows the distribution of the new admissions by educational level. The highest proportion

amongst them completed primary level education followed by those who passed their secondary level education. A fairly high proportion (17.1%) and no formal education.

Where the language stream of education is concerned (Table 11) the greatest proportion were educated in the English stream, followed by those in the Chinese stream.

# **OCCUPATION**

The occupations of the newly admitted patients were studied. The findings are tabulated as shown in Table 12. The classification used is similar to that used in taking the Singapore census.

The majority of the patients were unemployed (56.4%) at the time of admission. For many of them this was due to the illness they were suffering from.

# HOUSING

The types of dwelling units in which the newly admitted patients stayed were looked into. Table 13 shows the distribution of the new admissions by dwelling units.

Table 10: DISTRIBUTION OF NEW ADMISSIONS BY EDUCATION AND SEX

| Highest<br>Standard<br>Passed | Male | Female | Total | %    |
|-------------------------------|------|--------|-------|------|
| No formal education           | 60   | 92     | 152   | 17.1 |
| Primary                       | 198  | 126    | 324   | 36.4 |
| Secondary                     | 197  | 108    | 305   | 34.2 |
| Post Secondary                | 30   | 13     | 43    | 4.8  |
| Tertiary                      | 19   | 5      | 24    | 2.7  |
| Others                        | 21   | 12     | 33    | 3.7  |
| Unknown                       | 7    | 3      | 10    | 1.1  |
| Total                         | 532  | 359    | 891   | 100  |

TABLE 11: DISTRIBUTION OF NEW ADMISSIONS BY EDUCATIONAL LANGUAGE STREAM

| Language Stream | Male | Female | Total | %    |
|-----------------|------|--------|-------|------|
| Nil             | 60   | 92     | 152   | 17.1 |
| English         | 257  | 131    | 388   | 43.5 |
| Chinese         | 170  | 113    | 283   | 31.8 |
| Malay           | 17   | 12     | 29    | 3.3  |
| Tamil           | 13   | 5      | 18    | 2.0  |
| Others          | 8    | 3      | 11    | 1.2  |
| Unknown         | 7    | 3      | 10    | 1.1  |
| Total           | 532  | 359    | 891   | 100  |

TABLE 12: DISTRIBUTION OF NEW ADMISSIONS BY OCCUPATION AND SEX

| Occupation                     | Male | Female | Total | %    |
|--------------------------------|------|--------|-------|------|
| Nil                            | 227  | 275    | 502   | 56.4 |
| Professional & Technical       | 22   | 5      | 27    | 3.0  |
| Administrative &<br>Managerial | 15   | 4      | 19    | 2.2  |
| Clerical                       | 9    | 17     | 26    | 2.9  |
| Sales                          | 32   | 3      | 35    | 3.9  |
| Fishing & Farming              | 3    | l 0    | 3     | 0.3  |
| Service                        | 90   | 27     | 117   | 13.1 |
| Transport                      | 10   | 0      | 10    | 1.1  |
| Production                     | 40   | 24     | 64    | 7.2  |
| Armed Forces                   | 81   | 0      | 81    | 9.1  |
| Not Known                      | 3    | 4      | 7     | 0.8  |
| Total                          | 532  | 359    | 891   | 100  |

TABLE 13: DISTRIBUTION OF NEW ADMISSIONS BY TYPE OF DWELLING UNIT

| Type of Dwelling Unit           | Male | Female | Total | %    |
|---------------------------------|------|--------|-------|------|
| Detached/Semi-detached bungalow | 10   | 15     | 25    | 2.8  |
| Terrace house                   | 12   | 15     | 27    | 3.0  |
| Shop house                      | 20   | 13     | 33    | 3.7  |
| HDB 1 room flat                 | 64   | 40     | 104   | 11.7 |
| HDB 2/3 room flat               | 208  | 148    | 356   | 39.9 |
| HDB 4/5 room flat               | 88   | 53     | 141   | 15.8 |
| Other flats                     | 5    | 9      | 14    | 1.6  |
| Attap/zinc roofed house         | 68   | 40     | 108   | 12.1 |
| Others                          | 48   | 22     | 70    | 7.9  |
| Not known                       | 9    | 4      | 13    | 1.5  |
| Total                           | 532  | 359    | 891   | 100  |

TABLE 14: DISTRIBUTION OF NEW ADMISSIONS BY POSTAL DISTRICT AND SEX

| POSTAL DISTRICT AND SEX |      |        |       |  |  |  |  |
|-------------------------|------|--------|-------|--|--|--|--|
| Postal<br>District      | Male | Female | Total |  |  |  |  |
| 01                      | 8    | 8      | 16    |  |  |  |  |
| 02                      | 13   | 8      | 21    |  |  |  |  |
| 03                      | 79   | 40     | 119   |  |  |  |  |
| 04                      | 13   | 6      | 19    |  |  |  |  |
| 05                      | 21   | 23     | 44    |  |  |  |  |
| 06                      | 0    | 0      | 0     |  |  |  |  |
| 07                      | 17   | 4      | 21    |  |  |  |  |
| 08                      | 8    | 5      | 13    |  |  |  |  |
| 09                      | 6    | 0      | 6     |  |  |  |  |
| 10                      | 17   | 11     | 28    |  |  |  |  |
| 11                      | 8    | 4      | 12    |  |  |  |  |
| 12                      | 48   | 41     | 89    |  |  |  |  |
| 13                      | 17   | 13     | 30    |  |  |  |  |
| 14                      | 32   | 21     | 53    |  |  |  |  |
| 15                      | 20   | 20     | 40    |  |  |  |  |
| 16                      | 56   | 33     | 89    |  |  |  |  |
| 17                      | 3    | 1      | 4     |  |  |  |  |
| 18                      | 0    | 3      | 3     |  |  |  |  |
| 19                      | 23   | 17     | 40    |  |  |  |  |
| 20                      | 61   | 35     | 96    |  |  |  |  |
| 21                      | 4    | 5      | 9     |  |  |  |  |
| 22                      | 19   | 17     | 36    |  |  |  |  |
| 23                      | 9    | 7      | 16    |  |  |  |  |
| 24                      | 3    | 5      | 8     |  |  |  |  |
| 25                      | 9    | 6      | 15    |  |  |  |  |
| 26                      | 1    | 3      | 4     |  |  |  |  |
| 27 .                    | 7    | 2      | 9     |  |  |  |  |
| 28                      | 3    | 1      | 4     |  |  |  |  |
| Not known               | 27   | 20     | 47    |  |  |  |  |
| Total                   | 532  | 359    | 891   |  |  |  |  |

The majority of the patients (67.4%) stayed in Housing and Development Board (HDB) flats. This was an under representation considering that 75% of Singapore's population live in HDB flats. This is an interesting point as it is contrary to expectation that the mentally ill are not well tolerated in high rise living.

## POSTAL DISTRICTS

The distribution of new admissions by areas of residence using postal districts is shown in Table 14.

The highest number of patients come from postal district 3, district 20, 12 and 16.

# **DIAGNOSES**

The diagnoses made in respect of the newly admitted patients are shown in Table 15. The classification used is that listed in the W.H.O. International Classification of Diseases (Chapter V of the ICD — 9).

The majority of the patients suffered from Schizophrenia (54.1%). Altogether the functional psychoses (schizophrenia, affective psychoses, paranoid states and other non-organic psychoses) accounted for 64.2% of the new admissions and organic psychoses for 8.7% of them. Neurotic disorders were diagnosed in 5.4% and acute reactions to stress in 5.8% of the cases. Drug abuse including alcohol abuse were found in 4.6%.

Where ethnic groups were concerned, Schizophrenia was the major diagnosis in all the groups. The Indian/Pakistani group had a higher proportion (7.3% amongst them) suffering from the affective psychosis compared to the Chinese and the Malay groups (4.8% and 4.5% respectively) whereas the latter two groups had a higher proportion amongst their own groups suffering from Schizophrenia (54.7%, 56.4% for Chinese and Malays and 36.5% for Indians/Pakistanis).

The Indian/Pakistani group also showed a higher proportion amongst their own group (8.3%) to be suffering from alcohol dependence compared to the other two major ethnic groups (1.2% amongst the Chinese and 0% amongst the Malays). There may be a cultural basis for this difference.

When the age group distribution of the various illnesses was studied it was found that the majority of the Schizophrenic patients were below the age of 40 years, whereas with regards to the organic psychoses,

TABLE 15: DISTRIBUTION OF NEW ADMISSIONS BY DIAGNOSES AND ETHNIC GROUP

| ICD 9<br>Code | Diagnosis                                    | Chinese | Malay | Indian/<br>Pakistani | Others | Total | %    |
|---------------|--|---------|-------|----------------------|--------|-------|------|
| 000           | No Mental Illness                            | 8       | 3     | 1                    | 0      | 12    | 1.4  |
| 290           | Senile & Presenile<br>Organic Psychoses      | 22      | 2     | 0                    | 0      | 24    | 2.7  |
| 291           | Alcoholic Psychoses                          | 3       | 1     | 0                    | 1      | 5     | 0.6  |
| 292           | Drug Psychoses                               | 0       | 2     | 2                    | 1      | 5     | 0.6  |
| 293           | Transient Organic<br>Psychotic<br>Conditions | 18      | 3     | 4                    | 3      | 28    | 3.1  |
| 294           | Other Organic<br>Psychoses                   | 9       | 1     | 3                    | 2      | 15    | 1.7  |
| 295           | Schizophrenia                                | 374     | 57    | 35                   | 16     | 482   | 54.1 |
| 296           | Affective Psychoses                          | 31      | 5     | 7                    | 4      | 47    | 5.3  |
| 297           | Paranoid States                              | 21      | 0     | 3                    | 1      | 25    | 2.8  |
| 298           | Other non-organic psychoses                  | 8       | 6     | 3                    | 1      | 18    | 2.0  |
| 300           | Neurotic Disorders                           | 37      | 2     | 6                    | 3      | 48    | 5.4  |
| 301           | Personality Disorders                        | 16      | 6     | 5                    | 1      | 28    | 3.1  |
| 302           | Sexual Disorders                             | 2       | 3     | 0                    | 0      | 5     | 0.6  |
| 303           | Alcohol Dependence                           | 8       | 0     | 8                    | 1      | 17    | 1.9  |
| 304           | Drug Dependence                              | 2       | 1     | 0                    | 0      | 3     | 0.3  |
| 305           | Non-dependent abuse of drugs                 | 6       | 1     | .4                   | 0      | 11    | 1.2  |
| 307           | Special Symptoms                             | 2       | 0     | 0                    | 0      | 2     | 0.2  |
| 308           | Acute Reaction to<br>Stress                  | 39      | 2     | 7                    | 4      | 52    | 5.8  |
| 309           | Adjustment Reaction                          | 2       | 0     | 2                    | 0      | 4     | 0.5  |
| 310           | Post concussional syndrome                   | 2       | 0     | О                    | 0      | 2     | 0.2  |
| 317-<br>319   | Mental Retardation                           | 42      | 6     | 6                    | 4      | 58    | 6.5  |
|               | Total  | 652     | 101   | 96                   | 42     | 891   | 100  |

the majority were above the age of 40 (Table 16). Neurotic disorders were found mainly in the younger age groups (below 40 years). So were the acute reactions to stress. Of the latter group (n=48), 22 were National Serviceman.

The 12 who were found to have no evidence of mental illness were mainly those who were remanded by the Court for psychiatric assessment prior to trial.

## NATIONAL SERVICEMEN

Table 17 shows the distribution by diagnoses of the new admissions who were national servicemen (n = 93)

Of the 93 new inpatients who were National Servicemen, 33 suffered from Schizophrenia and 22 from acute reactions to stress.

## **FAMILY HISTORY**

When the family history with regards to mental illness as looked into, 198 out of the 891 new inpatients or 22% reported a positive family history of mental illness. Of these the majority found were in

families of Schizophrenic patients. Amongst all the Schizophrenic patients, 128 out of 347 i.e. 36.8% had a positive family history of mental illness. Thus about ½ of Schizophrenic patients would be expected to have a positive history of psychiatric illness.

## DISCUSSION

Mental hospitals are generally not popular places where people seek treatment because of the strong stigma involved. Patients who do get admitted are usualy those who suffer from the more severe forms of psychiatric illnesses. Hospital statistics are thus valuable in the study of severe psychiatric morbidity.

The majority of the new admissions were males, forming 59.7% of the new patients. The preponderance of males was also reported in mental hospitals in Malaya by Tan (3), in Pakistan by Chowdhruy (4) and in Mysore by Hoenig et al (5). This is in contrast to studies in UK which found a higher female to male ratio (6).

Most of the new admissions had illnesses of less than a week's duration and this group is represented by the acutely disturbed or suicidal ones. A fairly high proportion (24.8%) had illnesses of more than 2 years'

TABLE 16: DISTRIBUTION OF NEW ADMISSIONS BY AGE GROUP

| ICD 9<br>Code | Diagnosis                               | 11-19 | 20-29 | 30-39 | 40-49 | 50-59 | 60-69 | Over<br>70 | Age<br>Not<br>Known | Total |
|---------------|---|-------|-------|-------|-------|-------|-------|------------|---------------------|-------|
| 000           | No Mental Illness                       | 2     | 4     | 3     | 2     | 0     | 0     | 1          | 0                   | 12    |
| 290           | Senile & Presenile<br>Organic Psychoses | 0     | 0     | 0     | 0     | 6     | 2     | 16         | 0                   | 24    |
| 291           | Alcoholic Psychoses                     | 0     | 1     | 1     | 2     | 1     | 0     | 0          | 0                   | 5     |
| 292           | Drug Psychoses                          | 2     | 2     | 1     | 0     | 0     | 0     | 0          | 0                   | 5     |
| 293           | Transient Organic Psychotic Conditions  | 1     | 10    | 4     | 5     | 2     | 3     | 3          | 0                   | 28    |
| 294           | Other organic psychoses                 | 2     | 2     | 2     | 0     | 7     | 1     | 1          | 0                   | 15    |
| 295           | Schizophrenia                           | 80    | 219   | 98    | 66    | 27    | 7     | 2          | 3                   | 482   |
| 296           | Affective Psychoses                     | 4     | 12    | 7     | 13    | 4     | 3     | 4          | 0                   | 47    |
| 297           | Paranoid States                         | 0     | 6     | 1     | 3     | 4     | 2     | 9          | 0                   | 25    |
| 298           | Other non-organic psychoses             | 7     | 4     | 3     | 1     | 1     | 0     | 2          | 0                   | 18    |
| 300           | Neurotic Disorders                      | 12    | 12    | 13    | 4     | 4     | 3     | 0          | 0                   | 48    |
| 301           | Personality Disorders                   | 6     | 16    | 4     | 2     | 0     | 0     | 0          | 0                   | 28    |
| 302           | Sexual Disorders                        | 1     | 4     | 0     | 0     | 0     | 0     | 0          | 0                   | 5     |
| 303           | Alcoholic Dependence                    | 0     | 3     | 5     | 4     | 4     | 1     | 0          | 0                   | 17    |
| 304           | Drug Dependence                         | 0     | 3     | 0     | 0     | 0     | 0     | 0          | 0                   | 3     |
| 305           | Non-dependent abuse of drugs            | 2     | 3     | 4     | 2     | 0     | 0     | 0          | 0                   | 11    |
| 307           | Special Symptoms                        | 0     | 1.    | 0     | 1     | 0     | 0     | 0          | 0                   | 2     |
| 308           | Acute Peaction to<br>Stress             | 19    | 22    | 9     | 2     | 0     | 0     | 0          | 0                   | 52    |
| 309           | Adjustment Reaction                     | 2     | 1     | 0     | 1     | 0     | 0     | 0          | 0                   | 4     |
| 310           | Post concussional syndrome              | 1     | 1     | 0     | 0     | 0     | 0     | 0          | 0                   | 2     |
| 317-<br>319   | Mental Retardation                      | 26    | 17    | 11    | 2     | 1     | 0     | 0          | 1                   | 58    |
|               | Total                                   | 167   | 343   | 166   | 90    | 61    | 22    | 27         | 4                   | 891   |

duration and 16.7% more than 5 years. There should be greater awareness by the public of the need for early medical treatment and this can be achieved in one way by more health education of the public with regard to mental illness.

The majority (56.5%) of the patients had had no previous treatment prior to admission. Though cultural beliefs are still strong in our Republic it is surprising that only 9% reported ireatment by traditional healers in the first instance. This is very low compared to a study by Tan, Chee and Long in 1979 (9) who found that about 51% of first admissions had at some time consulted traditional healers prior to admission. However, the two figures are really not comparable as the figure in the present study represented those who sought traditional help in the first instance when they developed their illnesses.

Schizophrenia formed the majority of the diagnoses made on the new cases (54.1%). This finding is similar to that reported in the studies already quoted above (3, 4, 5) but in contrast to reports from the United Kingdom which had a larger proportion of cases with affective psychoses, dementia, neuroses and other non-psychotic conditions (7).

Compared to a study of newly admitted Schizophrenic patients which included the paranoid states by Tsoi and Chen in 1975 (8), the present study's finding of 56.9% for Schizophrenia and the paranoid states is lower than that of the 1975 study which was 61.8%. This difference could be due to the diagnostic habit of the present group of doctors in Woodbridge Hospital, more of whom are psychiatrically trained, and therefore more critical in their diagnosis of Schizophrenia. Alternatively it could represent an actual decline in the incidence of Schizophrenia over the years. Another possible reason could be that a number were treated by private psychiastrists in private hospitals. This observation requires further study.

Where affective psychoses are concerned the present finding of 5.3% is higher than the 2.5% reported in the 1975 study by Tsoi and Chen. This could be the result of more of such cases being recognized by the attending doctors.

The figures for organic psychoses are comparable in the two studies (8.7% and 8.4% respectively).

Compared to the findings of a community survey conducted 1978 the figure for functional psychotic illness is much higher in the present study (3.7 per 1000 in the community survey). This is to be expected as hospital admissions represent the more severe psychiatric illnesses.

| TABLE 17: DISTRIBUTION BY DIAGNOSES AND ETHNIC GROUP |
|--|
| (NATIONAL SERVICEMEN ONLY)                           |

| ICD 9<br>Code | Diagnosis                              | Chinese | Malay | Indian/<br>Pakistani | Others | Total |
|---------------|--|---------|-------|----------------------|--------|-------|
| 000           | No mental illness                      | 1       | .0    | 0                    | . 0    | 1     |
| 292           | Drug Psychoses                         | 0       | 1     | l о                  | 0      | 1     |
| 293           | Transient organic psychotic conditions | 1       | 0     | 0                    | 0      | 1     |
| 295           | Schizophrenia                          | 28      | 3     | 2                    | 0      | 33    |
| 296           | Affective Psychosis                    | 1       | 0     | 1                    | 0      | 2     |
| 297           | Paranoid States                        | 1       | 0     | 1                    | 0      | 2     |
| 300           | Neurotic Disorders                     | 11      | 1     | 2                    | 0      | 14    |
| 301           | Personality Disorders                  | 4       | 3     | 1                    | 1      | 9     |
| 302           | Sexual Disorders                       | 1       | 0     | o                    | 0      | 1     |
| 303           | Alcohol Dependence                     | 1       | 0     | 1                    | 0      | 2     |
| 305           | Non-dependent abuse drugs              | 1       | 0     | 0                    | 0      | 1     |
| 308           | Acute reaction to stress               | 15      | 1     | 5                    | 1      | 22    |
| 310           | Post concussional syndrome             | 1       | 0     | 0                    | 0      | 1     |
| 317-<br>319   | Mental Retardation                     | 2       | 0     | 0                    | 0      | 2     |
|               | Total                                  | 68      | 9     | 14                   | 2      | 93    |

Mental retardation formed about 6.5% of the new admissions. Most of them were admitted because of problematic behavioural problems. A fairly high proportion of them had family rejection and their disposal is a problem as there are no proper facilities in the community for adult mental handicapped patients in Singapore. The setting up of a special unit for their care should be looked into.

In the distribution of the new cases by postal districts, the highest numbers came from postal districts 3, 20, 12 and 16. If this reflects a true incidence of severe psychiatric morbidity in the community, then this observation should be taken into account in the future planning of psychiatric outpatient services.

Although the main value of hospital statistics would be administrative, in connection with planning the future needs of the mentally ill, they are also useful in studying trends in the characteristics of patients admitted to mental hospitals. Factors that govern the admission of patients to psychiatric hospitals are both complex and varied, and these would include factors like attitudes of the community to admission, hospital policy, demands of the mentally ill, their behaviour, therapeutic advances and their availability, the state of the law, etc. It can be said that admission would be the end result of a combination of these factors.

With the increasing use of computerizaton, such as studies can be carried out more easily. It should be done annually or at least periodically to study the changing trends of admission patterns in mental hospitals.

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